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10/681,869	10/08/2003	Bibhu Ranjan Priyadarshi	11220	7380

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EXAMINER	
AHLUWALIA, NAVNEET K	
ART UNIT	**PAPER NUMBER**
2166	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/681,869	Applicant(s) PRIYADARSHI ET AL.	
	Examiner Navneet K. Ahluwalia	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-10,12-16,18-22,24-28,30-34 and 36* is/are rejected.

7)☒ Claim(s) *5,11,17,23,29 and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the Amendment filed September 19, 2006.

Response to Arguments

2. Claims 1 – 36 are pending in this Office Action. After a further search and a thorough examination of the present application, claims 1 – 36 remain rejected. The amendments made to the specification have been accepted and in view of the amendment the objection to the disclosure is withdrawn.

3. Applicant's arguments filed with respect to claims 1 – 36 have been fully considered but they are not persuasive.

***First**, Applicant argues that there is no teaching in Bestgen of " if, the number of unique first table values ... returning the number of unique first table values", "determining an optimized cost of reading the second table…number of unique second table values", "summing the optimized cost of reading the first table and the optimized cost of reading the second table".*

In response to Applicant's argument, the Examiner submits that Bestgen teaches the query optimizer taking into account many factors including table sizes and with broad interpretation "if the number if unique first table values… returning the number of unique first table values" is basically considering the table size while optimization (column 3 lines 34 – 39). Furthermore, Bestgen teaches "determining an optimized cost of reading the second table… number of unique second table values" in column 3 lines

56 – 67 in which it discloses the optimizer determines the cost based on the costing algorithm and then processes the join or the implementation. Bestgen teaches summing the optimized cost of reading the first table and the optimized cost of reading the second table in column 3 lines 34 – 39, column 4 lines 29 – 37 and column 4 lines 48 – 52 that the optimization is done considering the table sizes amongst many other factors and based on that they are transformed into joins.

***Second**, Applicant argues that there is no teaching in Bestgen of "determine an optimized cost of reading the second table", "exiting the join after each of...determine an optimized cost of reading the second table", "summing the optimized cost of reading the first table and the optimized cost of reading the second table".*

In response to Applicant's argument, the Examiner submits that Bestgen teaches "determine an optimized cost of reading the second table" in column 3 lines 56 – 67 in which it discloses the optimizer determines the cost based on the costing algorithm and then processes the join or the implementation. Furthermore, Bestgen teaches "exiting the join after each of... determine an optimized cost of reading the second table" in column 3 lines 56 – 67 in which it discloses the optimizer determines the cost based on the costing algorithm and then processes the join or the implementation. Bestgen teaches summing the optimized cost of reading the first table and the optimized cost of reading the second table in column 3 lines 34 – 39, column 4 lines 29 – 37 and column 4 lines 48 – 52 that the optimization is done considering the table sizes amongst many other factors and based on that they are transformed into joins.

All claims recite the same subject matter and for the same reasons as cited above the rejection is maintained.

Hence, Applicant's arguments do not distinguish the claimed invention over the prior art of record. In light of the foregoing arguments, the 102 rejections are sustained.

Allowable Subject Matter

4. Claims 5, 11, 17, 23, 29 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 – 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Bestgen et al. ('Bestgen' herein after) (US 6,134,546).

With respect to claim 1,

Bestgen discloses a method of optimized costing (Figure 2 element 208, Bestgen), the method comprising:

- identifying a join that identifies a first table and a second table; the first table comprising one or more unique first table values, the second table comprising one or more unique second table values (column 4 lines 59 – 67, Bestgen);
- determining an optimized cost of reading the first table, the optimized cost of reading the first table comprising: if the number of unique first table values is greater than the number of unique second table values, returning the number of instances where a unique first table value matches a unique second table value; otherwise, returning the number of unique first table values (column 3 lines 34 – 48, Bestgen);
- determining an optimized cost of reading the second table, the optimized cost of reading the second table comprising the number of unique second table values (column 3 lines 58 – 67, Bestgen); and
- summing the optimized cost of reading the first table and the optimized cost of reading the second table (column 4 lines 29 – 37, Bestgen).

With respect to claim 2,

Bestgen discloses the method of Claim 1, further comprising multiplying the optimized cost of reading the first table by a multiplier if the number of unique first table values is greater than the number of unique second table values (Figure 9B and column 8 lines 5 – 18, Bestgen).

With respect to claim 3,

Bestgen discloses the method of Claim 2, wherein the multiplier is the number of unique second table values divided by the number of unique first table values (Figure 9B column 8 lines 48 – 56, Bestgen).

With respect to claim 4,

Bestgen discloses the method of Claim 1, wherein determining the optimized cost of reading the second table further comprises performing unique sorting on the right table (column 1 lines 57 – 63, Bestgen).

With respect to claim 6,

Bestgen discloses the method of Claim 1, wherein determining an optimized cost of reading the first table further comprises: assigning a confidence level to the first table; and assigning a confidence level to the second table (Figure 12A, 12B column 9 lines 23 – 33, Bestgen).

With respect to claim 7,

Bestgen discloses a method of optimized costing (Figure 2 element 208), the method comprising:

- identifying a join that identifies a first table and a second table, the first table comprising one or more unique first table values, the second table comprising one or more unique second table values (column 4 lines 59 – 67, Bestgen);

- removing one or more duplicate instances of each of the one or more unique second table values to determine an optimized cost of reading the second table (column 3 lines 34 – 48, Bestgen);
- exiting the join after each of the first unique table values is matched to a second unique table value to determine an optimized cost of reading the first table (Figure 4, 5A and column 3 lines 58 – 67, Bestgen); and
- summing the optimized cost of reading the first table and the optimized cost of reading the second table (column 4 lines 29 – 37, Bestgen).

With respect to claim 8,

Bestgen discloses the method of Claim 7, further comprising: determining whether the number of unique first table values is greater than the number of unique second table values; if the number of unique first table values is greater than the number of unique second table values, multiplying the optimized cost of reading the first table by a multiplier; otherwise, returning the number of unique first table values (Figure 9B and column 8 lines 5 – 18, Bestgen).

With respect to claim 9,

Bestgen discloses the method of Claim 8, wherein the multiplier is the number of unique second table values divided by the number of unique first table values (Figure 9B column 8 lines 48 – 56, Bestgen).

With respect to claim 10,

Bestgen discloses the method of Claim 7, wherein removing the one or more duplicate instances of each of the one or more unique second table values comprises: performing unique sorting on the right table; and returning the number of unique second table values (column 1 lines 57 – 63, Bestgen).

With respect to claim 12,

Bestgen discloses the method of Claim 7, wherein exiting the join after each of the first unique table values is matched to a second unique table value further comprises: assigning a confidence level to the first table; and assigning a confidence level to the second table (Figure 12A, 12B column 9 lines 23 – 33, Bestgen).

With respect to claim 13,

Bestgen discloses a database system for accessing a database, the database system including:

- a massively parallel processing system including one or more nodes; a plurality of CPUS, each of the one or more nodes providing access to one or more CPUS; a plurality of virtual processes each of the one or more CPUS providing access to one or more processes; and each process configured to manage data stored in one of a plurality of data-storage facilities (column 2 lines 50 – 62, Bestgen);

- an optimizer for optimizing costing (Figure 2 element 208, Bestgen), the optimizer including:
    - a process for identifying a join that identifies a first table and a second table, the first table comprising one or more unique first table values, the second table comprising one or more unique second table values (column 4 lines 59 – 67, Bestgen);
    - a process for determining an optimized cost of reading the first table, the optimized cost of reading the first table comprising: if the number of unique first table values is greater than the number of unique second table values, a process for returning the number of instances where a unique first table value matches a unique second table value; otherwise, a process for returning the number of unique first table values (column 3 lines 34 – 48, Bestgen);
    - a process for determining an optimized cost of reading the second table, the optimized cost of reading the second table comprising the number of unique second table values (column 3 lines 58 – 67, Bestgen); and
    - a process for summing the optimized cost of reading the first table and the optimized cost of reading the second table (column 4 lines 29 – 37, Bestgen).

With respect to claim 14,

Bestgen discloses the database system of Claim 13, wherein the optimizer further includes a process for multiplying the optimized cost of reading the first table by a multiplier if the number of unique first table values is greater than the number of unique second table values (Figure 9B and column 8 lines 5 – 18, Bestgen).

With respect to claim 15,

Bestgen discloses the database system of Claim 14, wherein the multiplier is the number of unique second table values divided by the number of unique first table values (Figure 9B column 8 lines 48 – 56, Bestgen)

With respect to claim 16,

Bestgen discloses the database system of Claim 13, wherein the process for determining the optimized cost of reading the second table further comprises a process for performing unique sorting on the right table (column 1 lines 57 – 63, Bestgen).

With respect to claim 18,

Bestgen discloses the database system of Claim 13, wherein the process for determining an optimized cost of reading the first table further comprises: assigning a confidence level to the first table; and assigning a confidence level to the second table (Figure 12A, 12B column 9 lines 23 – 33, Bestgen).

With respect to claim 19,

Bestgen discloses a database system for accessing a database. the database system including:

- a massively parallel processing system including one or more nodes; a plurality of CPUS, each of the one or more nodes providing access to one or more CPUS; a plurality of virtual processes each of the one or more CPUS providing access to one or more processes; and each process configured to manage data stored in one of a plurality of data-storage facilities (column 2 lines 50 – 62, Bestgen);
- an optimizer for optimizing costing (Figure 2 element 208, Bestgen), the optimizer including:
    - a process for identifying a join that identifies a first table and a second table, the first table comprising one or more unique first table values, the second table comprising one or more unique second table values (column 4 lines 59 – 67, Bestgen);
    - a process for removing one or more duplicate instances of each of the one or more unique second table values to determine an optimized cost of reading the second table (column 3 lines 34 – 48, Bestgen);
    - a process for exiting the join after each of the first unique table values is matched to a second unique table value to determine an optimized cost of reading the first table (column 3 lines 58 – 67, Bestgen); and

- a process for summing the optimized cost of reading the first table and the optimized cost of reading the second table (column 4 lines 29 – 37, Bestgen).

With respect to claim 20,

Bestgen discloses the database system of Claim 19, wherein the optimizer further includes: a process for determining whether the number of unique first table values is greater than the number of unique second table values; if the number of unique first table values is greater than the number of unique second table values, a process for multiplying the optimized cost of reading the first table by a multiplier; otherwise, a process for returning the number of unique first table values (Figure 9B and column 8 lines 5 – 18, Bestgen).

With respect to claim 21,

Bestgen discloses the database system of Claim 20, wherein the multiplier is the number of unique second table values divided by the number of unique first table values (Figure 9B column 8 lines 48 – 56, Bestgen).

With respect to claim 22,

Bestgen discloses the database system of Claim 19, wherein the process for removing the one or more duplicate instances of each of the one or more unique second table values comprises: performing unique sorting on the right table; and returning the number of unique second table values (column 1 lines 57 – 63, Bestgen).

With respect to claim 24,

Bestgen discloses the database system of Claim 19, wherein the process for exiting the join after each of the first unique table values is matched to a second unique table value further comprises: assigning a confidence level to the first table; and assigning a confidence level to the second table (Figure 12A, 12B column 9 lines 23 – 33, Bestgen).

With respect to claim 25,

Bestgen discloses a computer program, stored on a tangible storage medium, for optimizing costing (Figure 2 element 208, Bestgen), the program including executable instructions that cause a computer to:

- identify a join that identifies a first table and a second table, the first table comprising one or more unique first table values, the second table comprising one or more unique second table values (column 4 lines 59 – 67, Bestgen);
- determine an optimized cost of reading the first table, the optimized cost of reading the first table comprising: if the number of unique first table values is greater than the number of unique second table values, returning the number of instances where a unique first table value matches a unique second table

value; otherwise, returning the number of unique first table values (column 3 lines 34 – 48, Bestgen);

- determine an optimized cost of reading the second table, the optimized cost of reading the second table comprising the number of unique second table values (column 3 lines 58 – 67, Bestgen); and
- sum the optimized cost of reading the first table and the optimized cost of reading the second table (column 4 lines 29 – 37, Bestgen).

With respect to claim 26,

Bestgen discloses the computer program of Claim 25 including executable instructions that further cause a computer to multiply the optimized cost of reading the first table by a multiplier if the number of unique first table values is Greater than the number of unique second table values (Figure 9B and column 8 lines 5 – 18, Bestgen).

With respect to claim 27,

Bestgen discloses the computer program of Claim 26, wherein the multiplier is the number of unique second table values divided by the number of unique first table values (Figure 9B column 8 lines 48 – 56, Bestgen).

With respect to claim 28,

Bestgen discloses the computer program of Claim 25, where when determining the optimized cost of reading the second table, the computer: performs unique sorting on the right table (column 1 lines 57 – 63, Bestgen).

With respect to claim 30,

Bestgen discloses the computer program of Claim 25, where when determining an optimized cost of reading the first table, the computer: assigns a confidence level to the first table; and assigns a confidence level to the second table (Figure 12A, 12B column 9 lines 23 – 33, Bestgen)

With respect to claim 31,

Bestgen discloses a computer program, stored on a tangible storage medium, for optimizing costing (Figure 2 element 208), the program including executable instructions that cause a computer to:

- identify a join that identifies a first table and a second table, the first table comprising one or more unique first table values, the second table comprising one or more unique second table values (column 4 lines 59 – 67, Bestgen);
- remove one or more duplicate instances of each of the one or more unique second table values to determine an optimized cost of reading the second table (column 3 lines 34 – 48, Bestgen);

- exit the join after each of the first unique table values is matched to a second unique table value to determine an optimized cost of reading the first table (Figure 4, 5A and column 3 lines 58 – 67, Bestgen); and
- sum the optimized cost of reading the first table and the optimized cost of reading the second table (column 4 lines 29 – 37, Bestgen).

With respect to claim 32,

Bestgen discloses the computer program of Claim 31, including executable instructions that further cause a computer to: determine whether the number of unique first table values is greater than the number of unique second table values; if the number of unique first table values is greater than the number of unique second table values, multiply the optimized cost of reading the first table by a multiplier; otherwise, return the number of unique first table values (Figure 9B and column 8 lines 5 – 18, Bestgen).

With respect to claim 33,

Bestgen discloses the computer program of Claim 32, wherein the multiplier is the number of unique second table values divided by the number of unique first table values (Figure 9B column 8 lines 48 – 56, Bestgen).

With respect to claim 34,

Bestgen discloses the computer program of Claim 31, where when removing the one or more duplicate instances of each of the one or more Unique second table values, the computer: performs unique sorting on the right table; and returns the number of unique second table values (column 1 lines 57 – 63, Bestgen).

With respect to claim 36,

Bestgen discloses the computer program of Claim 31, where when exiting the join after each of the first unique table values is matched to a second unique table value, the computer: assigns a confidence level to the first table; and assigns a confidence level to the second table (Figure 12A, 12B column 9 lines 23 – 33, Bestgen).

Conclusion

7. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navneet K. Ahluwalia whose telephone number is 571-272-5636. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam T. Hosain can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Navneet
Navneet K. Ahluwalia
Examiner
Art Unit 2166

MOHAMMAD ALI
PRIMARY EXAMINER

Dated: 12/18/2006